

May 9, 1933.

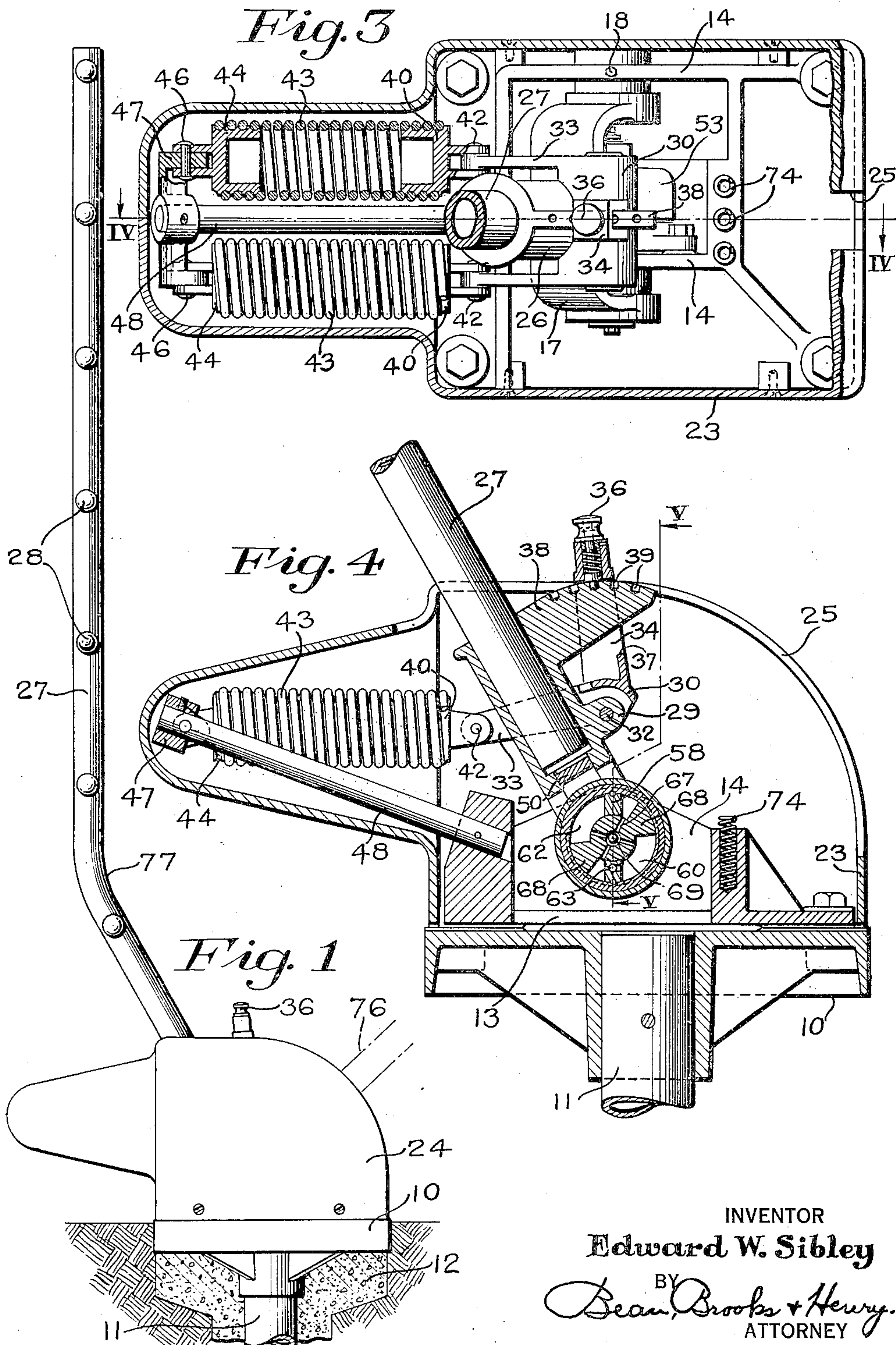
E. W. SIBLEY

1,907,451

AMUSEMENT DEVICE

Filed June 1, 1931

2 Sheets-Sheet 1



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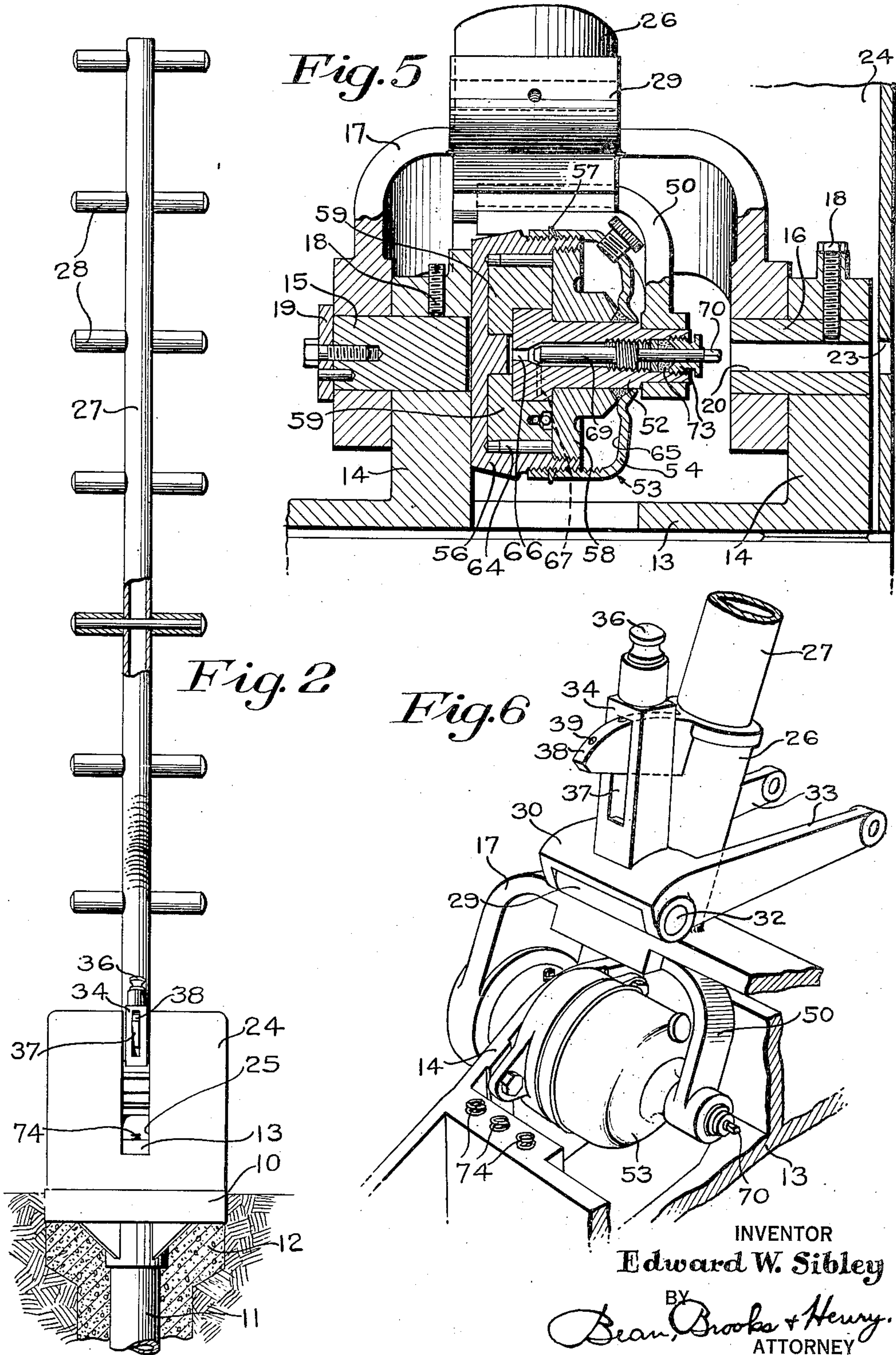
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UNITED STATES PATENT OFFICE

EDWARD W. SIBLEY, OF KENMORE, NEW YORK

AMUSEMENT DEVICE

Application filed June 1, 1931. Serial No. 541,449.

This invention relates to amusement devices and it has particular relation to a yielding tiltable device adapted to be actuated by the weight of a person utilizing it.

5 Various kinds of recreation and amusement devices are very popular in parks and playgrounds as well as in private homes. Younger individuals, especially children are very fond of swinging upon yieldable devices and they secure wholesome recreation by taking advantage of facilities of this kind. However, devices which are inherently resilient may be dangerous if used by children because there is likelihood of violent rebounds and children are more or less careless when they are playing.

According to this invention a swinging ladder, pole or the like is provided with a suitable pivotal mounting and with means normally maintaining the ladder in a substantially upright position, the effect of which means may be overcome by the weight or force exerted by the user on the ladder or pole. A child or other person may climb upon the ladder or swing it against the resistance offered, which may include the sum of the resistances offered by a device such as a shock absorber preventing jerky or violent action of the ladder, together with the resistance offered by the means normally holding the ladder in an upright position, which may be in the nature of a counterweight or resilient means, or against either one of these effects taken individually, depending upon the specific form and nature of the device.

The invention also comprehends an amusement device which may be safely employed as a swinging pole or ladder and which is so simple and compact in construction as to be inexpensive as well as being adapted for installation in a relatively small space. Moreover, the amusement device operates smoothly and gently as a mechanical unit and is attractive to children or others who may use it.

For a better understanding of the invention reference may now be had to the accompanying drawings forming a part of the specification, of which:

50 Fig. 1 is a side elevation of an amusement

device constructed according to the invention;

Fig. 2 is a front elevation of the amusement device;

Fig. 3 is a top plan on a larger scale of certain elements of the invention and including a cross sectional view of other elements;

Fig. 4 is a vertical section taken substantially along the lines IV—IV of Fig. 3;

Fig. 5 is a vertical section, on a larger scale, taken substantially along the lines V—V of Fig. 4; and

Fig. 6 is a fragmentary perspective view of the shock absorbing elements, the connections therefor also being shown.

Referring to Figs. 1 and 2 of the drawings, a base 10 having an anchoring post 11 secured thereto is firmly held in a stationary position by means of a concrete foundation 12 in which the post is embedded. A plate 13 is bolted to the base 10 and is provided with bearing flanges 14 having bearing members 15 and 16 therein which serve as pivotal supports for a yoke 17. Suitable set screws 18 secure the bearing members 15 and 16 in the bearing flanges 14 and a cap 19 rigidly secured to the end of the bearing member 15 prevents axial displacement of the yoke from the bearing members. An axial bore 20 in the bearing member 16 registers with an opening 23 in a housing 24 that encloses the yoke and support 13, and is bolted or otherwise suitably secured to the latter. A relatively long slot 25 is also provided in the housing, and extends in a direction transversely of the axis of the bearing members 15 and 16.

The upper portion of the yoke 17 is provided with an integral socket 26 in which an upright ladder 27 having rungs 28 thereon is rigidly fitted. At one side of the socket an integral bearing lug 29 pivotally supports the fulcrum of a bell crank 30 upon a pin 32. Two parallel arms 33 of the bell crank straddle the socket and another arm 34 extending at substantially right angles to the arms 33 is provided with a spring pressed pin 36 that extends into the upper end of a slot 37 formed in the arm. A projection 38, having its outer surface curved upon a radius equal approximately to the distance from the axis of the

pin 32 to the upper end of the slot 37, is provided with recesses 39 for receiving one end of the spring pressed pin. Thus, the arm 34 can be pivotally moved and secured in a plurality of positions by manually withdrawing the pin 36 from one of the recesses 39 and inserting it into another.

At the outer end of each arm 33 a threaded cylindrical support 40 is secured by means of a pivotal connection 42 to one end of a helical spring 43. One end of each of the springs 43 is threaded upon each support. Likewise the other end of each spring is threaded upon a similar cylindrical support 44 that is pivoted, as indicated at 46, to a yoke 47 carried rigidly by one end of a rod 48. The other end of the rod is rigidly anchored in a flanged portion of the plate 13. By adjusting the bell crank about the pin 32, the distance of the spring supports 40 from the axis of the bearing members 15 and 16 is varied. Thus the rate of tensioning of the spring is varied for the various positions of adjustment of the bell crank, and speed of pivoting of the pole is varied with the same load, or this speed can be regulated to be substantially the same for different loads.

As best shown in Figs. 5 and 6 an intermediate portion on the yoke 17 is provided with an arm 50 which is rigidly connected to an actuating shaft 52 of a shock absorber or resistance device 53. It will be observed that the axis of the shaft 52 coincides with the axis of the bearing members 15 and 16. The shock absorber comprises casings 54 and 56 screw threaded together and provided with sealing rings 57, the latter casing being bolted to the bearing flange 14. A disc 58 threaded into the casing 56 serves as a bearing member for the shaft 52 and two partitions 59 disposed at right angles to the disc 58 define two fluid containing chambers 60 and 62 that communicate with each other by means of a one-way valve 63. Key pins 64 serve to maintain the partitions rigidly in the casing 56. These chambers also are in communication with each other through ducts 66 and 67 in the shaft 52.

The shaft 52 also extends through the casing 54, and the latter provides a lubricant chamber 65 in conjunction with the disc 58. Integral vanes 68 forming a part of one end of the shaft 52 are operable in the chambers 60 and 62 to force the fluid from one to the other, and the resistance of the fluid in the chambers to the rotation of the shaft 52 depends upon the amount of fluid that is permitted to flow through the ducts 67 and valve 63. The passage of fluid through these ducts can be regulated by means of an adjusting pin 69 disposed in the duct 66 and secured in threaded relation into the end of the shaft 52. A squared stem 70 of the pin 69 extends through the end of the shaft 52 and suitable fluid-tight fittings 73 pre-

vent escape of fluid from the ducts. In order to control or regulate the flow of fluid through the ducts 66 and 67 a suitable tool is inserted through the opening 23 and bore 20 and the pin 69 is adjusted thereby.

It will be observed that the flow of fluid is arrested by the valve 63 as the ladder 27 is tilted in a clockwise direction, as viewed in Fig. 4, and that the springs 43 also resist tilting of the ladder in this direction. Since the springs 43 are connected to the ladder at a location materially spaced from the axis of the supporting bearing members 15 and 16, these springs immediately draw the ladder back to an upright position after it is released from a tilted position although the fluid prevents a sudden rebound or jerk of the ladder back to the upright position. Cushioning devices 74 mounted in the plate 13 are adapted to serve as a guard against injury of any of the parts of the device when ladder is swung to such extreme position as to cause the lug 29 to strike these devices.

One or two children may climb upon the ladder or leap upon it and it will yield or swing gently to the position shown by broken lines 76 of Fig. 1. This swinging action is confined approximately to one plane and the ladder is guided in that plane by the bearing members 15 and 16. In order that a child may mount the ladder to the desired height, before beginning a descent, the ladder is bent or off-set, as indicated at 77. Thus in the upright position thereof as shown by Fig. 1, the mean center line of the ladder is at the left of the axis of the bearing members 15 and 16, and it is prevented from further movement to the left by the springs 43 under light loads, or by contacting the plate 13. Then a child may commence operation of the device by swinging the body outwardly to the right.

From the foregoing description it will be apparent that the amusement device is well adapted to be installed in a relatively small space, it is adapted to be operated under various conditions of weight and adjustment, and because of the simplicity of its construction it is inexpensive to construct.

Although only one form of the invention has been shown and described in detail it will be apparent to those skilled in the art that the invention is not so limited but that various changes may be made therein without departing from the spirit of the invention or from the scope of the appended claims.

I claim:

1. An amusement device comprising an upright member for supporting a person, yieldable means for resisting movement of the member from its upright position, resilient means co-acting with the yieldable means for returning the upright member to an upright position after it has been moved

therefrom, and means for supporting the yieldable means.

2. An amusement device comprising an upright member for supporting a person, a stationary housing for receiving one end of the member, a fluid containing shock absorber connected to said member in the housing for yieldably resisting movement of the member from its upright position.

3. An amusement device comprising an upright member having rungs thereon, a stationary support pivotally connected to the member, a fluid shock absorber for resisting movement of the upright member about the pivotal connections, and springs connected to the upright member for normally maintaining the latter in an upright position and for resisting movement thereof away from such position.

4. An amusement device comprising a swinging pole, a stationary member, a pivotal connection between the stationary member and the pole, a shock absorber mounted upon an axis coincident with the axis of the pivotal connection, an extension on the pole to the shock absorber for actuating the latter and springs connected to the pole at a location spaced from the axis of said pivotal connection and to the stationary member for normally maintaining the pole in an upright position.

5. An amusement device comprising a swinging pole having rungs thereon, a yoke secured to the lower portion of the pole, a stationary support, pivotal connections between the yoke and the support, a shock absorber operable about the axis of the pivotal connection to resist tilting motion of the pole, a bell crank pivotally connected to the yoke, an extension on the yoke and having means for securing the bell crank in a plurality of positions, and a spring connected to the bell crank and to the support for resiliently maintaining the pole in an upright position.

6. An amusement device comprising a swinging pole having rungs thereon, a stationary member pivotally supporting the pole at its lower end, a fluid shock absorber connected to the pole for resisting the tilting motion thereof, springs connected to the pole for maintaining the latter in an upright position, and a housing surrounding the lower portion of the pole, said housing having a slot therein for accommodating the pole in its plane of movement.

7. An amusement device comprising a ladder, a stationary base for supporting the ladder, a housing mounted upon the base, means on the base for resisting tilting motion of the ladder, and other means for normally maintaining the ladder in an upright position and also resisting tilting motion thereof, said housing having a slot therein for

receiving the ladder in its predetermined plane of movement.

8. An amusement device comprising a stationary base, a housing having a slot therein mounted upon the base, an upright member pivoted upon the base and operable in said slot, means for yieldably and resiliently opposing tilting of the member, a bell crank connected to the upright member in conjunction with said means, means for changing the position of the bell crank on the upright member to vary the resistance to tilting of the member, and buffers on said base for cushioning and limiting tilting motion of the upright member.

EDWARD W. SIBLEY.

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